

CLAIMS

1. A thermal spray coated piston ring, characterized in that it is provided with a thermal spray coating film which contains from 2 to 40 mass % of Sn and from 5 to 50 mass % of graphite, the balance essentially consisting of Cu.

5 2. A thermal spray coated piston ring according to claim 1, characterized in that said thermal spray coating film is formed on the outermost peripheral surface.

3. A thermal spray coated piston ring according to claim 1 or 2, wherein at least 5 % or more of particles of said graphite in volume ratio are dispersed in the thermal spray coating film.

10 4. A thermal spray coated piston ring according to any one of claims 1 through 3, characterized in that the thermal spray coating film contains, except for the general impurities of Sn bronze, one or more kinds selected from the group consisting of P, Sb, Co, Be, Cr, Mn, Si, Cd, Zn, Fe, Ni and Pb, and the amount of these components are: 1.0% of P at the highest, 5 % of Sb at the highest, 5% of Co at the highest, 5% of Be at the
15 highest, 5% of Cr at the highest, 15% of Mn at the highest, 15% of Si at the highest, 15% of Cd at the highest, 15% of Zn at the highest, 5% of Fe at the highest, 20% of Ni at the highest, and 20% of Pb at the highest, the balance being Cu.

5. A piston ring according to claim 4, wherein the total amount of one or more elements selected from the group consisting of P, Sb, Co, Be, Cr, Mn, Si, Cd, Zn, Fe, Ni
20 and Pb, is 25 mass % at the highest.

6. A thermal spray coated piston ring according to any one of claims 1 through 5, characterized in that the average hardness of the thermal spray coating film is 300Hv0.1 or less.

7. A thermal spray coated piston ring according to any one of claims 1 through
25 6, characterized in that said thermal spray coating film consists of multiple layers, an upper coating layer is formed on a lower coating layer which has a surface roughness as thermal spray coated and is not mechanically machined.

8. A thermal spray coated piston ring according to any one of claims 1 through 7, wherein said thermal spray coating film is from 50 to 500 μ m thick.

30